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July 2, 2010

Kenneth Thiessen, Certified Engineering Geologist
Oregon Dept. of Environmental Quality
NW Region Cleanup Program
2020 SW 4th Ave, Ste, 400, Portland, OR 97201
(503) 229-6015

RE: Third Stormwater Sampling Report
GS Roofing Products, 6350 NW Front Avenue
Portland, Oregon

Dear Mr. Thiessen:

Per the Stormwater Assessment Workplan (SWAWP) dated January 2009, the SWAWP Addendum and response dated April 2009, and final Oregon Dept. of Environmental Quality (DEQ) comments and approval dated May 21, 2009, Forensic Environmental Services, Inc. (FES), on behalf of CertainTeed Corporation (CertainTeed), has prepared this letter report summarizing stormwater sampling activities conducted at GS Roofing Products, 6350 NW Front Avenue, Portland, Oregon on May 19, 2010.

This sampling report, which was prepared and submitted within 30 days of receipt of the stormwater sampling laboratory data package (July 3, 2010), includes:

- Introduction;
- A review of the May 19, 2010 sampling activities and any deviations from the sampling plan;
- Copies of field documentation (see Appendix A);
- Copies of the laboratory report and chain-of-custody form (see Appendix A);
- Data summaries in paper and electronic format (see Table 2, CD enclosed);
- A discussion of the compounds detected, any compounds detected above their respective SLV, and the magnitude of the exceedances;
- Similar information and documentation for stormwater sampling activities conducted on November 7, 2009; and
- Request to modify the sampling parameters during the final sampling event.

Introduction

Catch basin and stormwater sampling locations, and the associated analytical suites were finalized in the January 2009 SWAWP and the May 2009 DEQ approval letter. Following receipt of the DEQ SWAWP approval letter, CertainTeed made preparations for sample collection including contracting TestAmerica, Inc. of Portland (TestAmerica) as the field consultant. Stormwater catch basin sediment samples were collected by TestAmerica in July 2009, and the results were discussed in the Catch Basin Sediment Sampling Report submitted by FES on September 24, 2009.

The initial stormwater sampling event was completed by TestAmerica on October 21, 2009, and the results were discussed in the Initial Stormwater Sampling Report submitted by FES on December 3, 2009. A second stormwater sampling event was completed on November 7, 2009; however, the results were qualified because the storm did not meet the storm event criteria (see below). Comments received in a DEQ Correspondence dated February 16, 2010, and results from a stormwater sampling event completed on February 23, 2010 were discussed in the Second Stormwater Sampling Report submitted by FES on April 8, 2010.

Stormwater sampling locations (Outfall A & Outfall B) are depicted on Figure 1. The analytical suite proposed for each sampling location for the May 2010 sampling event is summarized in Table 1.

May 19, 2010 - Storm Event Criteria

Storm event criteria are as follows: 1) antecedent dry period of at least 24 hours (less than 0.1 inch); 2) minimum rainfall of at least 0.2 inches; and 3) rainfall duration of at least 3 hours. Based on precipitation data obtained from the nearest City of Portland HYDRA Station (No. 193, Astor Elementary School, 5601 N. Yale St., located approximately 1.0 mile northeast of the site), light rainfall started between 9:00 am and 10:00 am Pacific Standard Time (PST) on May 19, 2010. The last significant rainfall event in the area (i.e., more than 0.1 inches) had ended two days earlier on May 17, 2010.

Rainfall during the previous 24 hours was 0.02 inches, total rainfall during the May 19, 2010 event was 0.29 inches, and continuous precipitation lasted approximately 4 hours, so the May 19, 2010 rainfall event meets the storm event criteria. A temporal rainfall distribution graph, as outlined in the DEQ document *Guidance for Evaluating the Stormwater Pathway at Cleanup Sites* public review draft dated May 1, 2008, is provided as Figure 2.

TestAmerica mobilized to the GS Roofing site on May 19, 2010. Weather conditions at the time of sampling were cloudy with light rain, calm winds, and a temperature of approximately 59°F. Stormwater discharge did not begin until approximately 11:15 pm PST, and stormwater sampling was initiated at approximately 11:30 pm PST; therefore, this event constitutes the second "first-flush" sampling event (i.e., samples were collected within 30 minutes of the start of stormwater discharge).

May 19, 2010 - Sampling Methods and Documentation

Stormwater samples were collected directly from Outfall A and Outfall B into laboratory supplied bottleware. Based on the available information provided by TestAmerica, sampling methods generally followed the methodology identified in the Washington Department of Ecology (DOE) 2005 document *How to Do Stormwater Sampling: A guide for industrial facilities*. Field sampling documentation provided by TestAmerica is included with the laboratory report (see Appendix A).

May 19, 2010 - Analytical Suite

The analytical suite for the stormwater samples is listed in Table 1. Each stormwater sample was analyzed for total suspended solids (TSS) via Standard Method 2540D, total organic carbon (TOC) via Standard Method 5310C, volatile organic compounds (VOCs) via EPA Method 8260B, selected target analyte list (TAL) metals via EPA Methods 200.7/200.8/7470A, total petroleum hydrocarbons-diesel range organics (TPH-DRO), TPH-heavy oil range hydrocarbons (TPH-HORH), and TPH-gasoline range hydrocarbons (TPH-GRH) via Methods NWTPH-Dx & NWTPH-Gx, semi-volatile organic compounds (SVOCs) via EPA Method 8270C, and polyaromatic hydrocarbons (PAHs) and phthalates via EPA Method 8270M-SIM. Per the February 16, 2010 DEQ correspondence, samples were also analyzed for polychlorinated biphenyls (PCBs) via EPA Method 8082 and organochlorine pesticides via EPA Method 8081A/8082.

The selected analytical laboratory, TestAmerica, attempted to achieve the screening level values (SLVs) listed in Table 3-1 of the Portland Harbor Joint Source Control Strategy (JSCS) dated December 2005 to the extent practicable. Except for SVOC analytes, which had slightly higher reporting limits, the May 2010 analyses met or exceeded the laboratory Method Reporting Limit (MRL) value listed in Table 3-1 of the JSCS December 2005 document; however, MRLs for multiple analytes exceeded the corresponding SLV.

May 19, 2010 - Deviations from the Approved SWAWP

The following deviation from the approved SWAWP was noted: 1) some specified Quality Assurance and Quality Control (QA/QC) samples were not collected on May 19, 2010 (see discussion under "Data Quality Assurance and Quality Control"). No other deviations from the approved SWAWP were noted.

May 19, 2010 - Sampling Results and Discussion

Stormwater sampling results are summarized in Table 2. A copy of the laboratory analytical data report is provided in Appendix A.

No VOCs via EPA Method 8260B were detected in the stormwater sample collected from Outfall A on May 19, 2010, but acetone and toluene were detected in the sample collected from Outfall B at concentrations of 26.2 micrograms per liter (µg/L) and 1.36 µg/L, respectively. Acetone and toluene have not been detected in previous stormwater samples, and the concentrations reported in May 2010 are well below the corresponding SLVs of 1,500 µg/L and 9.8 µg/L, respectively, for these two analytes (see Table 2).

No SVOCs were detected via EPA Method 8270C or EPA Method 8270M-SIM in the May 19, 2010 stormwater samples. No organochlorine pesticides were detected via EPA Method 8081A/8082, and no PCBs were detected via EPA Method 8082 in the May 19, 2010 stormwater samples.

TPH-GRH was not detected in either of the May 2010 stormwater samples, but TPH-DRO and TPH-HORH were detected in the Outfall A sample at concentrations of 0.637 milligrams per liter (mg/L) and 1.480 mg/L, respectively, and TPH-HORH was detected in the Outfall B sample at a concentration 1.560 mg/L. The presence of TPH-DRO and TPH-HORH in the stormwater samples is attributed to: 1) parking lot run-off; and/or 2) ongoing industrial activities (asphalt shingle manufacturing).

Of the 13 TAL metal analytes, eight were detected in the May 2010 stormwater samples (see Table 2). Detected metal concentrations were consistently higher in the stormwater sample from Outfall B, and two analytes (antimony and nickel) detected in the Outfall B samples were not detected in the Outfall A sample. Detected metal concentrations in May 2010 were lower than the results obtained during the February 2010 sampling event, which was also a first-flush event.

Four metals exceeded their respective SLVs in both stormwater samples (see Table 2): aluminum (maximum concentration 1,260 µg/L; SLV 50 µg/L), copper (maximum concentration 32.3 µg/L; SLV 2.7 µg/L), lead (maximum concentration 6.57 µg/L; SLV 0.54 µg/L), and zinc (maximum concentration 157 µg/L; SLV 36 µg/L). As noted previously, the maximum concentration was consistency obtained in the Outfall B sample. The manganese concentration in the Outfall B sample (93.6 µg/L) also exceeded the SLV (50 µg/L).

There are no identified on-site sources for the lead and manganese detected in the stormwater samples (however, trace amounts of aluminum are present in the "Green Diamond" sand used at the facility). Copper and zinc are present in raw materials used at the GS Roofing Site.

The May 2010 stormwater samples were also analyzed for TSS and TOC. Results are presented in Table 2. The TSS concentration was 20.0 mg/L at Outfall A and 70.0 mg/L at Outfall B, and TOC ranged from 12.7 mg/L (Outfall A) to 20.0 mg/L (Outfall B). The stormwater pH (field measurement) was 6.67 at Outfall A and 6.88 at Outfall B.

May 19, 2010 - Data Quality Assurance and Quality Control (QA/QC)

Proposed QA/QC measures included the collection of trip and equipment blanks, field duplicate samples, and VOC matrix spike/matrix spike duplicate (MS/MSD) samples. No analytes were detected in the VOC trip blank associated with the May 19, 2010 stormwater samples. Equipment blanks were not prepared because the May 2010 stormwater samples were collected directly from the outfalls into laboratory bottleware.

Although the laboratory ran internal duplicate and VOC MS/MSD samples, discrete field duplicate samples were not collected by TestAmerica on May 19, 2010. Field sampling procedures were again reviewed with TestAmerica to ensure proper QA/QC samples are collected during subsequent sampling events.

Data validation was performed in accordance with USEPA procedures and the site-specific Quality Assurance Project Plan (QAPP). The Quality Control Summary for the laboratory analytical data package was reviewed.

The following nonconformances were noted in the laboratory analytical data package: 1) due to low levels of the analytes aluminum and selenium, the duplicate relative percent differences (RPDs) did not provide useful information; 2) the

hydrocarbons detected in the TPH-DRO samples did not have a distinct diesel pattern; and 3) the TOC samples were received in inappropriate sample containers. The QA/QC results do not indicate any major qualifications or rejections of any of the reported data.

November 7, 2009 Sampling Event

As discussed in the FES Initial Stormwater Sampling Report dated December 3, 2009, a fourth stormwater sampling event conducted on November 7, 2009 did not meet the full storm event criteria (see below). The data from this sampling event was to be disqualified unless they were determined to be consistent with other sampling events. Detailed information on the November 7, 2009 sampling event follows below.

November 7, 2009 - Storm Event Criteria

Based on precipitation data obtained from the nearest City of Portland HYDRA Station (No. 193, Astor Elementary School, 5601 N. Yale St., located approximately 1.0 mile northeast of the site), heavy rainfall started between 10:00 am and 11:00 am PST on November 7, 2009. Total rainfall during this event was 1.29 inches and continuous precipitation lasted approximately 8 hours.

However, there was also a storm event during the late evening of November 6 and the early morning of November 7 (i.e., within the previous 24 hours) of approximately 0.52 inches, and a significant rainfall event (i.e., more than 0.1 inches) of approximately 0.39 inches also occurred in the early morning of November 6, 2009. Therefore, the antecedent dry period was not present before the November 7, 2009 stormwater sampling event. A temporal rainfall distribution graph, as outlined in the DEQ document *Guidance for Evaluating the Stormwater Pathway at Cleanup Sites* public review draft dated May 1, 2008, is provided as Figure 2A.

TestAmerica mobilized to the GS Roofing site on November 7, 2009. Weather conditions at the time of sampling were mostly cloudy with light rain, moderate winds, and a temperature of approximately 47^{o}F. The time stormwater discharge began at the site is unknown, but based on other rainfall events it was likely between 11:00 am and 12 noon PST. Stormwater sampling was not initiated until approximately 16:45 pm PST, therefore, the November 7, 2009 event does not constitute a “first-flush” sampling event (i.e., samples were not collected within 30 minutes of the start of stormwater discharge).

November 7, 2009 - Sampling Methods and Documentation

Similar to the May 2010 sampling event, stormwater samples were collected directly from Outfall A and Outfall B into laboratory supplied bottleware. Based on the available information provided by TestAmerica, sampling methods generally followed the methodology identified in the Washington DOE 2005 document *How to Do Stormwater Sampling: A guide for industrial facilities*. Field sampling documentation provided by TestAmerica is included with the laboratory report (see Appendix A).

November 7, 2009 - Analytical Suite

The analytical suite for the stormwater samples is listed in Table 1A. Each stormwater sample was analyzed for TSS via Standard Method 2540D, TOC via Standard Method 5310C, VOCs via EPA Method 8260B, selected TAL metals via EPA Methods 200.7/200.8/7470A, TPH-DRO, TPH-HORH, and TPH-GRH via Methods NWTPH-Dx & NWTPH-Gx, SVOCs via EPA Method 8270C, and PAHs and phthalates via EPA Method 8270M-SIM.

The selected analytical laboratory, TestAmerica, attempted to achieve the SLVs listed in Table 3-1 of the Portland Harbor JSCS dated December 2005 to the extent practicable. Except for metal analytes in the Outfall A sample, the November 2009 analyses met or exceeded the laboratory MRL value listed in Table 3-1; however, MRLs for multiple analytes exceeded the corresponding SLV.

November 7, 2009 - Deviations from the Approved SWAWP

The following deviation from the approved SWAWP were noted: 1) as previously discussed, the stormwater event did not meet the storm event criteria because there was no antecedent dry period: 2) sampling was initiated well after (at least four hours) stormwater discharge began; and 3) some specified QA/QC samples were not collected on November 7, 2009 (see discussion under "Data Quality Assurance and Quality Control"). No other deviations from the approved SWAWP were noted.

November 7, 2009 - Sampling Results and Discussion

Stormwater sampling results are summarized in Table 2A. A copy of the laboratory analytical data report is provided in Appendix A.

No VOCs were detected via EPA Method 8260B, and no SVOCs were detected via EPA Method 8270C in the stormwater samples collected on November 7, 2009 (see Table 2). No phthalates or PAHs were detected via EPA Method 8270M-SIM in the Outfall A sample collected on November 7, 2009, but bis(2-ethylhexyl)phthalate and pyrene were detected at concentrations of 1.44 µg/L and 0.0975 µg/L, respectively, in the Outfall B sample. The detected concentrations of these two compounds were below their respective SLVs of 2.2 µg/L and 0.2 µg/L. Bis(2-ethylhexyl)phthalate is not a manufacturing component at the GS Roofing site, but may be present in plastics used for wrapping product; low concentrations of pyrene are often associated with asphalt runoff.

TPH-GRH and TPH-DRO was not detected in either of the November 2009 stormwater samples, but TPH-HORH was detected in the Outfall B sample at concentrations of 0.706 mg/L. The presence of TPH-HORH in the stormwater samples is attributed to: 1) parking lot run-off; and/or 2) ongoing industrial activities (asphalt shingle manufacturing).

Of the 13 TAL metal analytes, seven were detected in the Outfall B sample November 2009 stormwater sample (see Table 2), but the only metal analyte detected in the Outfall A sample was manganese at a concentration of 4.16 mg/L (SLV 50 mg/L). Four metals exceeded their respective SLVs in the stormwater sample collected from Outfall B in November 2009 (see Table 2): aluminum (maximum concentration 793 µg/L; SLV 50 µg/L), copper (maximum concentration 16.6 µg/L; SLV 2.7 µg/L), lead (maximum concentration 3.36 µg/L; SLV 0.54 µg/L), and zinc (maximum concentration 79.4 µg/L; SLV 36 µg/L). Detected metal concentrations in November 2009 were generally lower than the results obtained during other stormwater sampling events, which may be a result of sampling during the end of a storm event that was not preceded by a requisite dry period.

As noted previously, there are no identified on-site sources for the lead detected in the stormwater samples, but trace amounts of aluminum are present in the "Green Diamond" sand used at the facility. Copper and zinc are present in raw materials used at the GS Roofing Site.

The November 2009 stormwater samples were also analyzed for TSS and TOC. Results are presented in Table 2. The TSS concentration was non-detect (less than 10.0 mg/L) at Outfall A, and 30.0 mg/L at Outfall B, and TOC ranged from 1.02 mg/L (Outfall B) to 3.52 mg/L (Outfall A). The stormwater pH (field measurement) was 6.87 at Outfall A and 7.05 at Outfall B.

November 7, 2009 - Data Quality Assurance and Quality Control (QA/QC)

Proposed QA/QC measures included the collection of trip and equipment blanks, field duplicate samples, and VOC MS/MSD samples. No analytes were detected in the VOC trip blank associated with the November 7, 2009 stormwater samples except chloroform, which was detected at a reported concentration of 6.39 µg/L. Equipment blanks were not prepared because the November 2009 stormwater samples were collected directly from the outfalls into laboratory bottleware.

Field duplicate samples were collected from Outfall A on November 7, 2009 for analysis of TAL metals, VOCs, and SVOCs (via EPA Method 8270C only). Laboratory results for the field duplicates were similar to the original samples; no analytes were detected in the field duplicate samples at comparable MRLs (manganese, detected at a concentration of 4.16 mg/L in the original sample, was not detected in the field duplicate at a concentration of 4.00 mg/L).

Although the laboratory ran internal VOC MS/MSD samples, discrete field MS/MSD samples were not collected by TestAmerica on November 7, 2009. TestAmerica was directed to collect MS/MSD samples during subsequent sampling events.

Data validation was performed in accordance with USEPA procedures and the site-specific QAPP. The Quality Control Summary for the laboratory analytical data package was reviewed.

The only nonconformance noted in the laboratory analytical data package was that due to low levels of the analytes copper and nickel, the duplicate RPDs did not provide useful information. The QA/QC results do not indicate any major qualifications or rejections of any of the reported data.

Request to Modify Sampling Parameters

Three sampling events meeting the full storm event criteria have been completed to date as part of the Stormwater Sampling Program at the GS Roofing Site: October 21, 2009; February 23, 2010 (first-flush); and May 19, 2010 (first-flush). In addition, as reviewed above, a fourth sampling event conducted on November 7, 2009 did not meet the full sampling criteria (there was no antecedent dry period), so the data from this sampling event was to be disqualified unless they were consistent with other sampling events.

Data from the four stormwater sampling events are summarized in Table 3. A review of the data indicates that except for the analyses listed on page one of Table 3, stormwater sampling results obtained on November 7, 2009 are consistent with the other stormwater sampling events. The reported presence of VOCs is limited to one-time low-level detections of acetone and toluene in Outfall B in May 2010, and reported SVOCs via EPA Method 8270C are limited to a one-time low-level detection of 3,4-methylphenol in Outfall A in February 2010. Organochlorine pesticides and PCBs were not detected during the October 2009 and May 2010 sampling events.

There have been one-time detections of two phthalates and two PAHs via EPA Method 8270M-SIM at concentrations below SLVs in the four Outfall A stormwater samples, and bis-(2-ethylhexyl)phthalate has been detected twice via EPA Method 8270M-SIM at concentrations below the SLV in the four Outfall B stormwater samples (see Table 3). Detections of PAHs via EPA Method 8270M-SIM at Outfall B are limited to: 1) fluoranthene and pyrene at concentrations below the SLVs in October 2009; 2) pyrene at a concentration below the SLV in November 2009; and 3) four PAHs at concentrations less than an order of magnitude above the SLVs in February 2010. PAHs were not detected via EPA Method 8270M-SIM at Outfall B in the May 2010 stormwater sample (see Table 3). Based on the limited SLV exceedances, these analytes do not appear to be significant compounds of concern (COCs) in the stormwater discharge from the GS Roofing site.

Compared with the other three stormwater sampling events, TSS, TOC, metals, and TPH concentrations (see page one of Table 3) were generally lower during the November 7, 2009 sampling event. This may be a result of additional "flushing" as the latter samples were collected during the end of a storm event that was not preceded by a requisite dry period.

Except as noted above, the data obtained on November 7, 2009 are consistent with the other stormwater sampling events, and it is concluded these data should not be disqualified, i.e., the requisite four stormwater sampling events have been completed. However, a final stormwater sampling event is proposed because selected November 2009 results were anomalous. The proposed analyses for this event, which would not need to be a first-flush sample, would be limited to TSS via Standard Method 2540D, TOC via Standard Method 5310C, selected TAL metals via EPA Methods 200.7/200.8/7470A, and TPH-DRO, TPH-HORH, and TPH-GRH via Methods NWTPH-Dx & NWTPH-Gx. This final round of sampling would provide data from four fully qualified storm events for these selected parameters. DEQ's prompt review of this proposed change is requested, so the next sampling event can be scheduled.

Future Sampling Events and Reporting

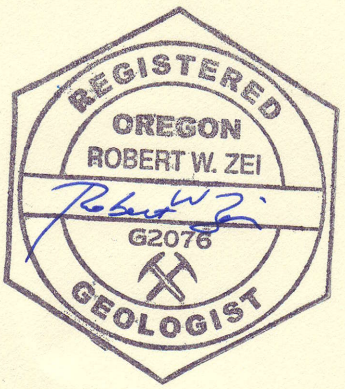
The February 16, 2010 DEQ correspondence requested that CertainTeed collect and analyze sediment samples from catch basin CB1-5 for PCBs and organochlorine pesticides, and if present, collect and analyze sediment samples from catch basin SP1-B for the full analysis suite (sediments were not present at this location in July 2009). The requested sediment samples are scheduled for collection during Second Quarter 2010. Per the DEQ-approved SWAWP, interim reports are to be submitted to the DEQ on at least a quarterly basis. Although not anticipated, if the final stormwater sampling event (see below) cannot be completed by September 2010, an interim catch basin sediment sampling report will be submitted to the DEQ at that time.

The final stormwater sampling event will be scheduled following DEQ review of the proposed sampling modification, and completed during an appropriate storm event. A comprehensive report, which will include a data summary and evaluation, a summary of any recommended stormwater source control measures and/or best management practices (BMPs), and a proposed Performance Monitoring Workplan, will be submitted to the DEQ within 60 days of receipt of the final stormwater sampling laboratory data package.

Per your request, one bound, one unbound, and one electronic copy (CD includes data summary table in Excel format) of this report are enclosed. If you have any questions or comments on the above information, please feel free to contact me at (610) 594-3940.

Sincerely yours,

FORENSIC ENVIRONMENTAL SERVICES, INC.



Robert W. Zei, Ph.D., RG #G2076
Sr. Project Manager

cc: Anthony Ordway, CertainTeed
Matthew Prue, CertainTeed
Lauren Alterman, Esq., Saint-Gobain Corporation

TABLES

Table 1
Sample Summary Matrix - May 2010 Stormwater Sampling Event
Stormwater Assessment Program (SAP)
GS Roofing Products Site
Portland, Oregon

Matrix : Stormwater

Parameter	Analytical Method	Sample Number and Locations	Sample Volumes, Container(s), and Preservative	Analysis Holding Time
Total Suspended Solids (TSS)	SM 2540D	Two SPs: Outfall A Outfall B	250 mL 250 mL poly or glass Cool to 4°C	7 days
Total Organic Carbon (TOC)	EPA 9060	Two SPs: Outfall A Outfall B	250 mL 250 mL amber glass H_3PO_4 to pH <2, Cool to 4°C	28 days
Target Analyte List (TAL) Metals	EPA 6010B/6020/ 7470	Two SPs: Outfall A Outfall B	250 mL 250 mL poly HNO_3 to pH <2, Cool to 4°C	6 months
NWTPH Dx, HORH	NWTPH Dx	Two SPs: Outfall A Outfall B	1 L 1 L amber glass HCl to pH <2, Cool to 4°C	14 days

SP = sampling point; Dx = diesel; HORH = heavy oil range hydrocarbons; L = liter; mL = milliliters.

Table 1
Sample Summary Matrix - May 2010 Stormwater Sampling Event
Stormwater Assessment Program (SAP)
GS Roofing Products Site
Portland, Oregon

Matrix : Stormwater

Parameter	Analytical Method	Sample Number and Locations	Sample Volumes, Container(s), and Preservative	Analysis Holding Time
NWTPH Gx	NWTPH Gx	Two SPs: Outfall A Outfall B	3 x 40 mL glass vials w/teflon-lined cap (no headspace) HCl to pH <2, Cool to 4°C	14 days
Volatile Organic Compounds (VOCs)	EPA 8260B	Two SPs: Outfall A Outfall B	3 x 40 mL glass vials w/teflon-lined cap (no headspace) HCl to pH <2, Cool to 4°C	14 days
Semi-Volatile Organic Compounds (SVOCs)	EPA 8270C	Two SPs: Outfall A Outfall B	1 L 1 L amber glass Cool to 4°C	7 days
PAHs & Phthalates	EPA 8270M-SIM	Two SPs: Outfall A Outfall B	1 L 1 L amber glass Cool to 4°C	7 days
Organochlorine Pesticides	EPA 8081A	Two SPs: Outfall A Outfall B	1 L (see end note) 1 L amber glass Cool to 4°C	7 days

SP = sampling point; Gx = gasoline; L = liter; mL = milliliters.

Table 1A
Sample Summary Matrix - November 2009 Stormwater Sampling Event
Stormwater Assessment Program (SAP)
GS Roofing Products Site
Portland, Oregon

Matrix : Stormwater

Parameter	Analytical Method	Sample Number and Locations	Sample Volumes, Container(s), and Preservative	Analysis Holding Time
Total Suspended Solids (TSS)	SM 2540D	Two SPs: Outfall A Outfall B	250 mL 250 mL poly or glass Cool to 4°C	7 days
Total Organic Carbon (TOC)	EPA 9060	Two SPs: Outfall A Outfall B	250 mL 250 mL amber glass H_3PO_4 to pH <2, Cool to 4°C	28 days
Target Analyte List (TAL) Metals	EPA 6010B/6020/ 7470	Two SPs: Outfall A Outfall B	250 mL 250 mL poly HNO_3 to pH <2, Cool to 4°C	6 months
NWTPH Dx, HORH	NWTPH Dx	Two SPs: Outfall A Outfall B	1 L 1 L amber glass HCl to pH <2, Cool to 4°C	14 days

SP = sampling point; Dx = diesel; HORH = heavy oil range hydrocarbons; L = liter; mL = milliliters.

Table 1A
Sample Summary Matrix - November 2009 Stormwater Sampling Event
Stormwater Assessment Program (SAP)
GS Roofing Products Site
Portland, Oregon

Matrix : Stormwater

Parameter	Analytical Method	Sample Number and Locations	Sample Volumes, Container(s), and Preservative	Analysis Holding Time
NWTPH Gx	NWTPH Gx	Two SPs: Outfall A Outfall B	3 x 40 mL glass vials w/teflon-lined cap (no headspace) HCl to pH <2, Cool to 4°C	14 days
Volatile Organic Compounds (VOCs)	EPA 8260B	Two SPs: Outfall A Outfall B	3 x 40 mL glass vials w/teflon-lined cap (no headspace) HCl to pH <2, Cool to 4°C	14 days
Semi-Volatile Organic Compounds (SVOCs)	EPA 8270C	Two SPs: Outfall A Outfall B	1 L 1 L amber glass Cool to 4°C	7 days
PAHs & Phthalates	EPA 8270M-SIM	Two SPs: Outfall A Outfall B	1 L 1 L amber glass Cool to 4°C	7 days

SP = sampling point; Gx = gasoline; L = liter; mL = milliliters.

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Total Suspended Solids (TSS) via SM 2540D						
Total Suspended Solids (in mg/L)	--	--	10000	**20.0**	**70.0**	**-**
TOC via EPA Method 9060						
Total Organic Carbon (in mg/L)	--	--	1000	**12.7**	**20.0**	**-**
pH via EPA Method 150.1						
pH (standard units)	--	--	--	**6.67**	**6.88**	**-**
Metals via EPA Method 6010B/6020/7470						
Aluminum	50	--	100	**373**	**1,260**	-
Antimony	6	--	1.00	<1.00	**1.03**	-
Arsenic	0.045	--	1.00	<1.00	<1.00	-
Cadmium	0.094	--	1.00	<1.00	<1.00	-
Chromium, total	100	--	2.00	**2.74**	**12.8**	-
Copper	2.7	--	2.00	**24.3**	**32.3**	-
Lead	0.54	--	1.00	**2.78**	**6.57**	-
Manganese	50	--	2.00	**30.1**	**93.6**	-
Mercury	0.77	--	0.200	<0.200	<0.200	-
Nickel	16	--	2.00	<2.00	**5.20**	-
Selenium	5	--	1.00	<1.00	<1.00	-
Silver	0.12	--	1.00	<1.00	<1.00	-
Zinc	36	--	10.0	**58.6**	**155**	**-**
TPH via NWTPH-Dx & NWTPH-Gx						
TPH Diesel	--	--	236/238	**637**	**1,480**	-
TPH-Gasoline	--	--	160	<80.0	<80.0	-
TPH Heavy Oil	--		472/476	<481	**1,560**	**-**
Volatile Organic Compounds via EPA Method 8260B						
Acetone	1500	--	50.0	<25.0	**26.2**	<25.0
Benzene	1.2	--	2.00	<1.00	<1.00	<1.00
Bromochloromethane	--	--	2.00	<1.00	<1.00	<1.00
Bromodichloromethane	1.1	--	2.00	<1.00	<1.00	<1.00
Bromoform	8.5	--	2.00	<1.00	<1.00	<1.00
Bromomethane	8.7	--	10.00	<5.00	<5.00	<5.00
2- Butanone (MEK)	7,100	--	20.0	<10.0	<10.0	<10.0
Carbon Disulfide	0.92	--	20.0	<10.0	<10.0	<10.0
Carbon Tetrachloride	0.51	--	2.00	<1.00	<1.00	<1.00
Chlorobenzene	50	--	2.00	<1.00	<1.00	<1.00
Chlorodibromomethane	0.79	--	2.00	<1.00	<1.00	<1.00
Chloroethane	23	--	2.00	<1.00	<1.00	<1.00

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Volatile Organic Compounds via EPA Method 8260B (cont.)						
Chloroform	0.17	--	2.00	<1.00	<1.00	<1.00
Chloromethane	2.1	--	10.0	<5.00	<5.00	<5.00
1,2- Dibromoethane (EDB)	0.033	--	2.00	<1.00	<1.00	<1.00
1,1- Dichloroethane	47	--	2.00	<1.00	<1.00	<1.00
1,2- Dichloroethane (EDC)	0.73	--	2.00	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	61	--	2.00	<1.00	<1.00	<1.00
trans-1,2-Dichloroethene	100	--	2.00	<1.00	<1.00	<1.00
1,2- Dichloropropane	0.97	--	2.00	<1.00	<1.00	<1.00
cis-1,3-Dichloropropene	0.055	--	2.00	<1.00	<1.00	<1.00
trans-1,3-Dichloropropene	0.055	--	2.00	<1.00	<1.00	<1.00
Dibromomethane	61	--	2.00	<1.00	<1.00	<1.00
Dichlorodifluoromethane	390	--	10.0	<5.00	<5.00	<5.00
Ethylbenzene	7.3	--	2.00	<1.00	<1.00	<1.00
2- Hexanone	99	--	20.0	<10.0	<10.0	<10.0
Isopropylbenzene	660	--	4.00	<2.00	<2.00	<2.00
Methylene chloride	8.9	--	10.0	<5.00	<5.00	<5.00
Methyl tert-butyl ether	37	--	2.00	<1.00	<1.00	<1.00
4- Methyl-2-Pentanone (MIBK)	170	--	10.0	<5.00	<5.00	<5.00
Styrene	100	--	2.00	<1.00	<1.00	<1.00
1,1,1,2- Tetrachloroethane	2.5	--	2.00	<1.00	<1.00	<1.00
1,1,2,2- Tetrachloroethane	0.33	--	2.00	<1.00	<1.00	<1.00
Tetrachloroethene (PCE)	0.12	--	2.00	<1.00	<1.00	<1.00
Toluene	9.8	--	2.00	<1.00	**1.36**	<1.00
1,1,1- Trichloroethane (TCA)	11	--	2.00	<1.00	<1.00	<1.00
1,1,2- Trichloroethane	1.2	--	2.00	<1.00	<1.00	<1.00
Trichloroethene (TCE)	0.17	--	2.00	<1.00	<1.00	<1.00
Trichlorofluoromethane	1,300	--	2.00	<1.00	<1.00	<1.00
1,2,3- Trichloropropane	0.0095	--	2.00	<1.00	<1.00	<1.00
Vinyl Chloride	0.015	--	2.00	<1.00	<1.00	<1.00
m,p-Xylene	1.8	--	4.00	<2.00	<2.00	<1.00
o-Xylene	13	--	2.00	<1.00	<1.00	<2.00
Xylenes (total)	200	--	6.00	<6.00	<6.00	<3.00

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Semi-Volatile Organic Compounds via EPA Method 8270C						
Oxygen-Containing Compounds						
Benzoic Acid	42	--	47.6	<48.1	<48.1	-
Benzyl Alcohol	8.6	--	9.52	<9.62	<9.62	-
Dibenzofuran	3.7	--	4.76	<4.81	<4.81	-
Isophorone	71	--	4.76	<4.81	<4.81	-
Halogenated Compounds						
1,2,4-Trichlorobenzene	8.2	--	4.76	<4.81	<4.81	-
1,2-Dichlorobenzene	49	--	4.76	<4.81	<4.81	-
1,3-Dichlorobenzene	14	--	4.76	<4.81	<4.81	-
1,4-Dichlorobenzene	2.8	--	4.76	<4.81	<4.81	-
2-Chloronaphthalene	490	--	4.76	<4.81	<4.81	-
3,3'-Dichlorobenzidine	0.028	--	4.76	<4.81	<4.81	-
4-Bromophenyl-phenyl ether	--	--	4.76	<4.81	<4.81	-
4-Chloroaniline	150	--	19.0	<19.2	<19.2	-
4-Chlorophenyl-phenyl ether	0.06	--	4.76	<4.81	<4.81	-
Bis-(2-chloroethoxy) methane	--	--	9.52	<9.62	<9.62	-
Bis-(2-chloroethyl) ether	0.06	--	4.76	<4.81	<4.81	-
Hexachlorobenzene	0.00029	--	4.76	<4.81	<4.81	-
Hexachlorobutadiene	0.86	--	9.52	<9.62	<9.62	-
Hexachlorocyclopentadiene	5.2	--	9.52	<9.62	<9.62	-
Hexachloroethane	3.3	--	9.52	<9.62	<9.62	-
Organonitrogen Compounds						
2,4-Dinitrotoluene	3.4	--	4.76	<4.81	<4.81	-
2,6-Dinitrotoluene	37	--	4.76	<4.81	<4.81	-
2-Nitroaniline	110.0	--	4.76	<4.81	<4.81	-
3-Nitroaniline	3.2	--	9.52	<9.62	<9.62	-
4-Nitroaniline	3.2	--	9.52	<9.62	<9.62	-
Nitrobenzene	3.4	--	4.76	<4.81	<4.81	-
N-Nitroso-di-n-propylamine	0.0096	--	9.52	<9.62	<9.62	-
N-Nitrosodiphenylamine	6	--	4.76	<4.81	<4.81	-
Phenols and Substituted Phenols						
2,4,5-Trichlorophenol	3600	--	4.76	<4.81	<4.81	-
2,4,6-Trichlorophenol	2.4	--	4.76	<4.81	<4.81	-
2,4-Dichlorophenol	110	--	4.76	<4.81	<4.81	-
2,4-Dimethylphenol	730	--	9.52	<9.62	<9.62	-
2,4-Dinitrophenol	73	--	23.8	<24.0	<24.0	-
2-Chlorophenol	30	--	4.76	<4.81	<4.81	-

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Semi-Volatile Organic Compounds via EPA Method 8270C (cont.)						
Phenols and Substituted Phenols (cont.)						
2-Methylphenol (o-Cresol)	13	--	9.52	<9.62	<9.62	-
2-Nitrophenol	150	--	4.76	<4.81	<4.81	-
4-Chloro-3-methylphenol	--	--	4.76	<4.81	<4.81	-
3,4-Methylphenol	180	--	4.76	<4.81	<4.81	-
4-Nitrophenol	150	--	23.8	<23.8	<23.8	-
Methyl-4,6-Dinitrophenol 2-	150	--	9.52	<9.62	<9.62	-
Pentachlorophenol	0.56	--	9.52	<9.62	<9.62	-
Phenol	2560	--	4.76	<4.81	<4.81	-
Phthalate Esters (but see 8270C-SIM analysis next page)						
bis(2-Ethylhexyl)phthalate	2.2	--	9.52	<9.62	<9.62	-
Butylbenzylphthalate	3	--	4.76	<4.81	<4.81	-
Diethylphthalate	3	--	4.76	<4.81	<4.81	-
Dimethylphthalate	3	--	4.76	<4.81	<4.81	-
Di-n-butylphthalate	3	--	4.76	<4.81	<4.81	-
Di-n-octylphthalate	3	--	4.76	<4.81	<4.81	-
Polycyclic Aromatic Hydrocarbons (PAHs) - (but see 8270C-SIM analysis next page)						
Acenaphthene	0.2	--	4.76	<4.81	<4.81	-
Acenaphthylene	0.2	--	4.76	<4.81	<4.81	-
Anthracene	0.2	--	4.76	<4.81	<4.81	-
Benzo(a)anthracene	0.018	--	4.76	<4.81	<4.81	-
Benzo(a)pyrene	0.018	--	4.76	<4.81	<4.81	-
Benzo(b)fluoranthene	0.018	--	4.76	<4.81	<4.81	-
Benzo(g,h,i)perylene	0.2	--	4.76	<4.81	<4.81	-
Benzo(k)fluoranthene	0.018	--	4.76	<4.81	<4.81	-
Chrysene	0.018	--	4.76	<4.81	<4.81	-
Dibenzo(a,h)anthracene	0.018	--	4.76	<4.81	<4.81	-
Fluoranthene	0.2	--	4.76	<4.81	<4.81	-
Fluorene	0.2	--	4.76	<4.81	<4.81	-
Indeno(1,2,3-cd)pyrene	0.018	--	4.76	<4.81	<4.81	-
2-Methylnaphthalene	0.2	--	4.76	<4.81	<4.81	-
Naphthalene	0.2	--	4.76	<4.81	<4.81	-
Phenanthrene	0.2	--	4.76	<4.81	<4.81	-
Pyrene	0.2	--	4.76	<4.81	<4.81	-

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Phthalates/PAHs via EPA Method 8270M-SIM						
Phthalate Esters						
bis(2-Ethylhexyl)phthalate	2.2	--	0.952	<0.952	<0.962	-
Butylbenzylphthalate	3	--	0.952	<0.952	<0.962	-
Diethylphthalate	3	--	0.952	<0.952	<0.962	-
Dimethylphthalate	3	--	0.952	<0.952	<0.962	-
Di-n-butylphthalate	3	--	0.952	<0.952	<0.962	-
Di-n-octylphthalate	3	--	0.952	<0.952	<0.962	-
PAHs						
Acenaphthene	0.2	--	0.0952	<0.0952	<0.0962	-
Acenaphthylene	0.2	--	0.143/0.286	<0.952	<0.0962	-
Anthracene	0.2	--	0.0952	<0.0952	<0.0962	-
Benzo(a)anthracene	0.018	--	0.0952	<0.0952	<0.0962	-
Benzo(a)pyrene	0.018	--	0.0952	<0.0952	<0.0962	-
Benzo(b)fluoranthene	0.018	--	0.0952	<0.0952	<0.0962	-
Benzo(g,h,i)perylene	0.2	--	0.0952	<0.0952	<0.0962	-
Benzo(k)fluoranthene	0.018	--	0.0952	<0.0952	<0.0962	-
Chrysene	0.018	--	0.0952	<0.0952	<0.0962	-
Dibenzo(a,h)anthracene	0.018	--	0.190	<0.190	<0.192	-
Fluoranthene	0.2	--	0.0952	<0.0952	<0.0962	-
Fluorene	0.2	--	0.0952	<0.0952	<0.0962	-
Indeno(1,2,3-cd)pyrene	0.018	--	0.0952	<0.0952	<0.0962	-
Naphthalene	0.2	--	0.0952	<0.0952	<0.0962	-
Phenanthrene	0.2	--	0.0952	<0.0952	<0.0962	-
Pyrene	0.2	--	0.0952	<0.0952	<0.0962	-

Table 2
Stormwater Sampling Results - May 19, 2010
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Trip Blank (µg/L)
Organochlorine Pesticides via EPA Method 8081A/8082						
α - BHC	0.0049	0.0500	0.100	<0.0962	<0.0980	-
β - BHC	0.017	0.0500	0.100	<0.0962	<0.0980	-
γ - BHC (Lindane)	0.052	0.0500	0.100	<0.0962	<0.0980	-
δ - BHC	0.037	0.0500	0.100	<0.0962	<0.0980	-
Aldrin	0.00005	0.0500	0.100	<0.0962	<0.0980	-
Chlordane	0.00081	0.500	1.00	<0.0962	<0.0980	-
DDE	0.00022	0.0500	0.100	<0.0962	<0.0980	-
DDD	0.00031	0.0500	0.100	<0.0962	<0.0980	-
DDT	0.00022	0.0500	0.100	<0.0962	<0.0980	-
DDT - total (DDE+DDD+DDT)	0.2	0.0500	0.100	<0.0962	<0.0980	-
Dieldrin	0.000054	0.0500	0.100	<0.0962	<0.0980	-
Endosulfan alpha-	0.056	0.0500	0.100	<0.0962	<0.0980	-
Endosulfan beta-	0.056	0.0500	0.100	<0.0962	<0.0980	-
Endosulfan sulfate	89	0.0500	0.100	<0.0962	<0.0980	-
Endrin	0.036	0.0500	0.100	<0.0962	<0.0980	-
Endrin aldehyde	0.3	0.0500	0.100	<0.0962	<0.0980	-
Endrin ketone	--	0.0500	0.100	<0.0962	<0.0980	-
Heptachlor	0.000079	0.0500	0.100	<0.0962	<0.0980	-
Heptachlor epoxide	0.000039	0.0500	0.100	<0.0962	<0.0980	-
Methoxychlor	0.03	0.0500	0.100	<0.0962	<0.0980	-
Toxaphene	0.0002	2.50	2.50	<2.40	<2.45	-
PCB Aroclors via EPA Method 8082						
Aroclor 1016	0.96	0.250	0.500	<0.481	<0.490	-
Aroclor 1221	0.034	0.500	1.00	<0.481	<0.490	-
Aroclor 1232	0.034	0.250	0.500	<0.481	<0.490	-
Aroclor 1242	0.034	0.250	0.500	<0.481	<0.490	-
Aroclor 1248	0.034	0.250	0.500	<0.481	<0.490	-
Aroclor 1254	0.033	0.250	0.500	<0.481	<0.490	-
Aroclor 1260	0.034	0.250	0.500	<0.481	<0.490	-

Detected analytes in bold.

SLV = screening level value (see Table 3-1 Portland Harbor Joint Source Control Strategy (JSCS) dated December 2005; "--" = value not available; µg/L = micrograms per liter; mg/L = milligrams per liter; MDL = laboratory method detection limit; MRL = laboratory method reporting limit.

Any analytes listed in the laboratory report (see Appendix A) that are not tabulated above were not detected above their respective MRL.

Table 2A
Stormwater Sampling Results - November 7, 2009
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Field Duplicate (µg/L)
Total Suspended Solids (TSS) via SM 2540D						
Total Suspended Solids (mg/L)	--	3100	10000	<10.0	**30.0**	**-**
TOC via EPA Method 9060						
Total Organic Carbon (mg/L)	--	167	1000	**3.52**	**1.02**	**-**
pH via EPA Method 150.1						
pH (standard units)	--	--	--	**6.87**	**7.05**	**-**
Metals via EPA Method 6010B/6020/7470						
Aluminum	50	8.30	100	<100	**793**	<100
Antimony	6	0.102	1.00	<2.00	<1.00	<2.00
Arsenic	0.045	0.664	1.00	<2.00	<1.00	<2.00
Cadmium	0.094	0.0714	1.00	<2.00	<1.00	<2.00
Chromium, total	100	0.121	1.00	<5.00	**15.0**	<5.00
Copper	2.7	0.133	2.00	<5.00	**16.6**	<5.00
Lead	0.54	0.0553	1.00	<2.00	**3.36**	<2.00
Manganese	50	0.640	10.0	**4.16**	**23.2**	<4.00
Mercury	0.77	0.0638	0.200	<0.200	<0.200	<0.200
Nickel	16	0.180	2.00	<5.00	**3.55**	<5.00
Selenium	5	0.284	2.00	<2.00	<1.00	<2.00
Silver	0.12	1.00	1.00	<2.00	<1.00	<2.00
Zinc	36	0.469	5.00	<25.0	**79.4**	<25.0
TPH via NWTPH-Dx & NWTPH-Gx						
TPH Diesel	--	17.9	250	<250	<250	-
TPH-Gasoline	--	32.7	80.0	<80.0	<80.0	-
TPH Heavy Oil	--	27.8	500	<500	**706**	**-**
Volatile Organic Compounds via EPA Method 8260B						
Acetone	1500	7.76	25.0	<25.0	<25.0	<25.0
Benzene	1.2	0.0900	1.00	<1.00	<1.00	<1.00
Bromochloromethane	--	0.180	1.00	<1.00	<1.00	<1.00
Bromodichloromethane	1.1	0.110	1.00	<1.00	<1.00	<1.00
Bromoform	8.5	0.100	1.00	<1.00	<1.00	<1.00
Bromomethane	8.7	0.170	5.00	<5.00	<5.00	<5.00
2- Butanone (MEK)	7,100	3.50	10.0	<10.0	<10.0	<10.0
Carbon Disulfide	0.92	0.140	10.0	<10.0	<10.0	<10.0
Carbon Tetrachloride	0.51	0.0600	1.00	<1.00	<1.00	<1.00
Chlorobenzene	50	0.0500	1.00	<1.00	<1.00	<1.00
Chlorodibromomethane	0.79	0.0700	1.00	<1.00	<1.00	<1.00
Chloroethane	23	0.110	1.00	<1.00	<1.00	<1.00

Table 2A
Stormwater Sampling Results - November 7, 2009
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Field Duplicate (µg/L)
Volatile Organic Compounds via EPA Method 8260B (cont.)						
Chloroform	0.17	0.0900	1.00	<1.00	<1.00	<1.00
Chloromethane	2.1	0.0800	5.00	<5.00	<5.00	<5.00
1,2- Dibromoethane (EDB)	0.033	0.110	1.00	<1.00	<1.00	<1.00
1,1- Dichloroethane	47	0.0800	1.00	<1.00	<1.00	<1.00
1,2- Dichloroethane (EDC)	0.73	0.100	1.00	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	61	0.0900	1.00	<1.00	<1.00	<1.00
trans-1,2-Dichloroethene	100	0.100	1.00	<1.00	<1.00	<1.00
1,2- Dichloropropane	0.97	0.110	1.00	<1.00	<1.00	<1.00
cis-1,3-Dichloropropene	0.055	0.0900	1.00	<1.00	<1.00	<1.00
trans-1,3-Dichloropropene	0.055	0.100	1.00	<1.00	<1.00	<1.00
Dibromomethane	61	0.110	1.00	<1.00	<1.00	<1.00
Dichlorodifluoromethane	390	0.110	5.00	<5.00	<5.00	<5.00
Ethylbenzene	7.3	0.0600	1.00	<1.00	<1.00	<1.00
2- Hexanone	99	3.62	10.0	<10.0	<10.0	<10.0
Isopropylbenzene	660	0.0700	2.00	<2.00	<2.00	<2.00
Methylene chloride	8.9	0.160	5.00	<5.00	<5.00	<5.00
Methyl tert-butyl ether	37	0.0900	1.00	<1.00	<1.00	<1.00
4- Methyl-2-Pentanone (MIBK)	170	0.290	5.00	<5.00	<5.00	<5.00
Styrene	100	0.0400	1.00	<1.00	<1.00	<1.00
1,1,1,2- Tetrachloroethane	2.5	0.0900	1.00	<1.00	<1.00	<1.00
1,1,2,2- Tetrachloroethane	0.33	0.0800	1.00	<1.00	<1.00	<1.00
Tetrachloroethene (PCE)	0.12	0.110	1.00	<1.00	<1.00	<1.00
Toluene	9.8	0.110	1.00	<1.00	<1.00	<1.00
1,1,1- Trichloroethane (TCA)	11	0.120	1.00	<1.00	<1.00	<1.00
1,1,2- Trichloroethane	1.2	0.130	1.00	<1.00	<1.00	<1.00
Trichloroethene (TCE)	0.17	0.0800	1.00	<1.00	<1.00	<1.00
Trichlorofluoromethane	1,300	0.0600	1.00	<1.00	<1.00	<1.00
1,2,3- Trichloropropane	0.0095	0.130	1.00	<1.00	<1.00	<1.00
Vinyl Chloride	0.015	0.100	1.00	<1.00	<1.00	<1.00
m,p-Xylene	1.8	0.210	2.00	<1.00	<1.00	<1.00
o-Xylene	13	0.0700	1.00	<2.00	<2.00	<2.00
Xylenes (total)	200	0.210	2.00	<3.00	<3.00	<3.00

Table 2A
Stormwater Sampling Results - November 7, 2009
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Field Duplicate (µg/L)
Semi-Volatile Organic Compounds via EPA Method 8270C						
Oxygen-Containing Compounds						
Benzoic Acid	42	50.0	50.0	<47.6	<47.6	<49.0
Benzyl Alcohol	8.6	5.00	10.0	<9.52	<9.52	<9.80
Dibenzofuran	3.7	3.00	5.00	<4.76	<4.76	<4.90
Isophorone	71	3.00	5.00	<4.76	<4.76	<4.90
Halogenated Compounds						
1,2,4-Trichlorobenzene	8.2	5.00	5.00	<4.76	<4.76	<4.90
1,2-Dichlorobenzene	49	3.00	5.00	<4.76	<4.76	<4.90
1,3-Dichlorobenzene	14	3.00	5.00	<4.76	<4.76	<4.90
1,4-Dichlorobenzene	2.8	3.00	5.00	<4.76	<4.76	<4.90
2-Chloronaphthalene	490	3.00	5.00	<4.76	<4.76	<4.90
3,3'-Dichlorobenzidine	0.028	3.00	5.00	<4.76	<4.76	<4.90
4-Bromophenyl-phenyl ether	--	3.00	5.00	<4.76	<4.76	<4.90
4-Chloroaniline	150	10.0	20.0	<19.0	<19.0	<19.6
4-Chlorophenyl-phenyl ether	0.06	3.00	5.00	<4.76	<4.76	<4.90
Bis-(2-chloroethoxy) methane	--	5.00	10.0	<9.52	<9.52	<9.80
Bis-(2-chloroethyl) ether	0.06	3.00	5.00	<4.76	<4.76	<4.90
Hexachlorobenzene	0.00029	3.00	5.00	<4.76	<4.76	<4.90
Hexachlorobutadiene	0.86	5.00	10.0	<9.52	<9.52	<9.80
Hexachlorocyclopentadiene	5.2	5.00	10.0	<9.52	<9.52	<9.80
Hexachloroethane	3.3	5.00	10.0	<9.52	<9.52	<9.80
Organonitrogen Compounds						
2,4-Dinitrotoluene	3.4	3.00	5.00	<4.76	<4.76	<4.90
2,6-Dinitrotoluene	37	3.00	5.00	<4.76	<4.76	<4.90
2-Nitroaniline	110.0	3.00	5.00	<4.76	<4.76	<4.90
3-Nitroaniline	3.2	5.00	10.0	<9.52	<9.52	<9.80
4-Nitroaniline	3.2	5.00	10.0	<9.52	<9.52	<9.80
Nitrobenzene	3.4	3.00	5.00	<4.76	<4.76	<4.90
N-Nitroso-di-n-propylamine	0.0096	5.00	10.0	<9.52	<9.52	<9.80
N-Nitrosodiphenylamine	6	3.00	5.00	<4.76	<4.76	<4.90
Phenols and Substituted Phenols						
2,4,5-Trichlorophenol	3600	3.00	5.00	<4.76	<4.76	<4.90
2,4,6-Trichlorophenol	2.4	3.00	5.00	<4.76	<4.76	<4.90
2,4-Dichlorophenol	110	3.00	5.00	<4.76	<4.76	<4.90
2,4-Dimethylphenol	730	5.00	10.0	<9.52	<9.52	<9.80
2,4-Dinitrophenol	73	15.0	25.0	<23.8	<23.8	<24.5
2-Chlorophenol	30	3.00	5.00	<4.76	<4.76	<4.90

Table 2A
Stormwater Sampling Results - November 7, 2009
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Field Duplicate (µg/L)
Semi-Volatile Organic Compounds via EPA Method 8270C (cont.)						
Phenols and Substituted Phenols (cont.)						
2-Methylphenol (o-Cresol)	13	5.00	10.0	<9.52	<9.52	<9.80
2-Nitrophenol	150	3.00	5.00	<4.76	<4.76	<4.90
4-Chloro-3-methylphenol	--	3.00	5.00	<4.76	<4.76	<4.90
3,4-Methylphenol	180	3.00	5.00	<4.76	<4.76	<4.90
4-Nitrophenol	150	10.0	25.0	<23.8	<23.8	<24.5
Methyl-4,6-Dinitrophenol 2-	150	5.00	10.0	<9.52	<9.52	<9.80
Pentachlorophenol	0.56	5.00	10.0	<9.52	<9.52	<9.80
Phenol	2560	3.00	5.00	<4.76	<4.76	<4.90
Phthalate Esters (but see 8270C-SIM analysis next page)						
bis(2-Ethylhexyl)phthalate	2.2	10.0	10.0	<9.52	<9.52	<9.80
Butylbenzylphthalate	3	3.00	5.00	<4.76	<4.76	<4.90
Diethylphthalate	3	3.00	5.00	<4.76	<4.76	<4.90
Dimethylphthalate	3	3.00	5.00	<4.76	<4.76	<4.90
Di-n-butylphthalate	3	3.00	5.00	<4.76	<4.76	<4.90
Di-n-octylphthalate	3	3.00	5.00	<4.76	<4.76	<4.90
Polycyclic Aromatic Hydrocarbons (PAHs) - (but see 8270C-SIM analysis next page)						
Acenaphthene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Acenaphthylene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Anthracene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Benzo(a)anthracene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Benzo(a)pyrene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Benzo(b)fluoranthene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Benzo(g,h,i)perylene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Benzo(k)fluoranthene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Chrysene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Dibenzo(a,h)anthracene	0.018	3.00	5.00	<4.76	<4.76	<4.90
Fluoranthene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Fluorene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Indeno(1,2,3-cd)pyrene	0.018	3.00	5.00	<4.76	<4.76	<4.90
2-Methylnaphthalene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Naphthalene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Phenanthrene	0.2	3.00	5.00	<4.76	<4.76	<4.90
Pyrene	0.2	3.00	5.00	<4.76	<4.76	<4.90

Table 2A
Stormwater Sampling Results - November 7, 2009
GS Roofing Products Site
Portland, Oregon

	SLV (DEQ 2008) (µg/L)	Laboratory MDL (µg/L)	Laboratory MRL (µg/L)	Outfall A (µg/L)	Outfall B (µg/L)	Field Duplicate (µg/L)
Phthalates/PAHs via EPA Method 8270M-SIM						
Phthalate Esters						
bis(2-Ethylhexyl)phthalate	2.2	0.526	1.00	<0.952	**1.44**	-
Butylbenzylphthalate	3	0.526	1.00	<0.952	<0.952	-
Diethylphthalate	3	0.526	1.00	<0.952	<0.952	-
Dimethylphthalate	3	0.526	1.00	<0.952	<0.952	-
Di-n-butylphthalate	3	0.526	1.00	**2.52**	<0.952	-
Di-n-octylphthalate	3	0.526	1.00	<0.952	<0.952	-
PAHs						
Acenaphthene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Acenaphthylene	0.2	0.0500	0.100	<0.143	<0.143	-
Anthracene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Benzo(a)anthracene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Benzo(a)pyrene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Benzo(b)fluoranthene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Benzo(g,h,i)perylene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Benzo(k)fluoranthene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Chrysene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Dibenzo(a,h)anthracene	0.018	0.100	0.200	<0.190	<0.190	-
Fluoranthene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Fluorene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Indeno(1,2,3-cd)pyrene	0.018	0.0500	0.100	<0.0952	<0.0952	-
Naphthalene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Phenanthrene	0.2	0.0500	0.100	<0.0952	<0.0952	-
Pyrene	0.2	0.0500	0.100	<0.0952	**0.0975**	**-**

Detected analytes in bold.

SLV = screening level value (see Table 3-1 Portland Harbor Joint Source Control Strategy (JSCS) dated December 2005; "--" = value not available; µg/L = micrograms per liter; mg/L = milligrams per liter; MDL = laboratory method detection limit; MRL = laboratory method reporting limit.

No analytes were detected in a trip blank submitted for VOC analysis except chloroform, which was detected at a reported concentration of 6.39 µg/L. The VOC analyte MRLs for the trip blank sample were the same as the VOC MRLs for the field duplicate sample.

Any analytes listed in the laboratory report (see Appendix A) that are not tabulated above were not detected above their respective MRL.

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Total Suspended Solids (TSS) via SM 2540D											
Total Suspended Solids (mg/L)	--	--	10000	**10.0**	<10.0	**60.0**	**20.0**	**6.86**	**30.0**	**60.0**	**70.0**
TOC via EPA Method 9060											
Total Organic Carbon (mg/L)	--	--	1000	**60.0**	**3.52**	**19.8**	**12.7**	**5.62**	**1.02**	**14.5**	**20.0**
pH via EPA Method 150.1											
pH (standard units)	--	--	--	**7.82**	**6.87**	**7.27**	**6.67**	**8.25**	**7.05**	**6.99**	**6.88**
Metals via EPA Method 6010B/6020/7470											
Aluminum	50	--	100	**227**	<100	**1,530**	**373**	**1,810**	**793**	**2,560**	**1,260**
Antimony	6	--	1.00	<1.00	<2.00	**1.16**	<1.00	<1.00	<1.00	**1.24**	**1.03**
Arsenic	0.045	--	1.00	<1.00	<2.00	**1.18**	<1.00	**1.05**	<1.00	**1.26**	<1.00
Cadmium	0.094	--	1.00	<0.500	<2.00	<1.00	<1.00	<0.500	<1.00	<1.00	<1.00
Chromium, total	100	--	2.00	**2.34**	<5.00	**9.85**	**2.74**	**17.1**	**15.0**	**15.3**	**12.8**
Copper	2.7	--	2.00	**17.6**	<5.00	**76.2**	**24.3**	**39.0**	**16.6**	**44.0**	**32.3**
Lead	0.54	--	1.00	**2.78**	<2.00	**11.8**	**2.78**	**7.49**	**3.36**	**7.40**	**6.57**
Manganese	50	--	2.00	**19.3**	**4.16**	**127**	**30.1**	**44.6**	**23.2**	**205**	**93.6**
Mercury	0.77	--	0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Nickel	16	--	2.00	**1.45**	<5.00	**4.64**	<2.00	**5.04**	**3.55**	**5.24**	**5.20**
Selenium	5	--	1.00	<0.500	<2.00	<1.00	<1.00	<0.500	<1.00	<1.00	<1.00
Silver	0.12	--	1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Zinc	36	--	10.0	**62.8**	<25.0	**167**	**58.6**	**177**	**79.4**	**157**	**155**
TPH via NWTPH-Dx & NWTPH-Gx											
TPH Diesel	--	--	236/238	**254**	<250	**764**	**637**	**549**	<250	**1,040**	**1,480**
TPH-Gasoline	--	--	160	<80.0	<80.0	<160	<80.0	<80.0	<80.0	<160	<80.0
TPH Heavy Oil	--	--	472/476	<481	<500	**960**	<481	<481	**706**	**1,510**	**1,560**

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Volatile Organic Compounds via EPA Method 8260B											
Acetone	1500	--	50.0	NA	<25.0	<50.0	<25.0	NA	<25.0	<50.0	**26.2**
Benzene	1.2	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Bromochloromethane	--	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Bromodichloromethane	1.1	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Bromoform	8.5	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Bromomethane	8.7	--	10.00	NA	<5.00	<10.0	<5.00	NA	<5.00	<10.0	<5.00
2- Butanone (MEK)	7,100	--	20.0	NA	<10.0	<20.0	<10.0	NA	<10.0	<20.0	<10.0
Carbon Disulfide	0.92	--	20.0	NA	<10.0	<20.0	<10.0	NA	<10.0	<20.0	<10.0
Carbon Tetrachloride	0.51	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Chlorobenzene	50	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Chlorodibromomethane	0.79	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Chloroethane	23	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Chloroform	0.17	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Chloromethane	2.1	--	10.0	NA	<5.00	<10.0	<5.00	NA	<5.00	<10.0	<5.00
1,2- Dibromoethane (EDB)	0.033	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,1- Dichloroethane	47	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,2- Dichloroethane (EDC)	0.73	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
cis-1,2-Dichloroethene	61	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
trans-1,2-Dichloroethene	100	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,2- Dichloropropane	0.97	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
cis-1,3-Dichloropropene	0.055	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
trans-1,3-Dichloropropene	0.055	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Dibromomethane	61	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Dichlorodifluoromethane	390	--	10.0	NA	<5.00	<10.0	<5.00	NA	<5.00	<10.0	<5.00
Ethylbenzene	7.3	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Volatile Organic Compounds via EPA Method 8260B (cont.)											
2- Hexanone	99	--	20.0	NA	<10.0	<20.0	<10.0	NA	<10.0	<20.0	<10.0
Isopropylbenzene	660	--	4.00	NA	<2.00	<4.00	<2.00	NA	<2.00	<4.00	<2.00
Methylene chloride	8.9	--	10.0	NA	<5.00	<10.0	<5.00	NA	<5.00	<10.0	<5.00
Methyl tert-butyl ether	37	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
4- Methyl-2-Pentanone (MIBK)	170	--	10.0	NA	<5.00	<5.00	<5.00	NA	<5.00	<5.00	<5.00
Styrene	100	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,1,1,2- Tetrachloroethane	2.5	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,1,2,2- Tetrachloroethane	0.33	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Tetrachloroethene (PCE)	0.12	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Toluene	9.8	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	**1.36**
1,1,1- Trichloroethane (TCA)	11	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,1,2- Trichloroethane	1.2	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Trichloroethene (TCE)	0.17	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Trichlorofluoromethane	1,300	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
1,2,3- Trichloropropane	0.0095	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
Vinyl Chloride	0.015	--	2.00	NA	<1.00	<2.00	<1.00	NA	<1.00	<2.00	<1.00
m,p-Xylene	1.8	--	4.00	NA	<1.00	<4.00	<2.00	NA	<1.00	<4.00	<2.00
o-Xylene	13	--	2.00	NA	<2.00	<2.00	<1.00	NA	<2.00	<2.00	<1.00
Xylenes (total)	200	--	6.00	NA	<3.00	<6.00	<6.00	NA	<3.00	<6.00	<6.00

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Semi-Volatile Organic Compounds via EPA Method 8270C											
Oxygen-Containing Compounds											
Benzoic Acid	42	--	47.6	<49.5	<47.6	<47.6	<48.1	<48.5	<47.6	<47.6	<48.1
Benzyl Alcohol	8.6	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Dibenzofuran	3.7	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Isophorone	71	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Halogenated Compounds											
1,2,4-Trichlorobenzene	8.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
1,2-Dichlorobenzene	49	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
1,3-Dichlorobenzene	14	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
1,4-Dichlorobenzene	2.8	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2-Chloronaphthalene	490	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
3,3'-Dichlorobenzidine	0.028	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
4-Bromophenyl-phenyl ether	--	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
4-Chloroaniline	150	--	19.0	<19.8	<19.0	<19.0	<19.2	<19.4	<19.0	<19.0	<19.2
4-Chlorophenyl-phenyl ether	0.06	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Bis-(2-chloroethoxy) methane	--	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Bis-(2-chloroethyl) ether	0.06	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Hexachlorobenzene	0.00029	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Hexachlorobutadiene	0.86	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Hexachlorocyclopentadiene	5.2	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Hexachloroethane	3.3	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Semi-Volatile Organic Compounds via EPA Method 8270C (cont.)											
Organonitrogen Compounds											
2,4-Dinitrotoluene	3.4	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2,6-Dinitrotoluene	37	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2-Nitroaniline	110.0	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
3-Nitroaniline	3.2	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
4-Nitroaniline	3.2	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Nitrobenzene	3.4	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
N-Nitroso-di-n-propylamine	0.0096	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
N-Nitrosodiphenylamine	6	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Phenols and Substituted Phenols											
2,4,5-Trichlorophenol	3600	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2,4,6-Trichlorophenol	2.4	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2,4-Dichlorophenol	110	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2,4-Dimethylphenol	730	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
2,4-Dinitrophenol	73	--	23.8	<24.8	<23.8	<23.8	<24.0	<24.3	<23.8	<23.8	<24.0
2-Chlorophenol	30	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2-Methylphenol (o-Cresol)	13	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
2-Nitrophenol	150	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
4-Chloro-3-methylphenol	--	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
3,4-Methylphenol	180	--	4.76	<4.95	<4.76	**5.69**	<4.81	<4.85	<5.69	<5.69	<4.81
4-Nitrophenol	150	--	23.8	<24.8	<23.8	<23.8	<23.8	<24.3	<23.8	<23.8	<23.8
Methyl-4,6-Dinitrophenol 2-	150	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Pentachlorophenol	0.56	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Phenol	2560	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Semi-Volatile Organic Compounds via EPA Method 8270C (cont.)											
Phthalate Esters (but see 8270C-SIM analysis next page)											
bis(2-Ethylhexyl)phthalate	2.2	--	9.52	<9.90	<9.52	<9.52	<9.62	<9.71	<9.52	<9.52	<9.62
Butylbenzylphthalate	3	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Diethylphthalate	3	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Dimethylphthalate	3	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Di-n-butylphthalate	3	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Di-n-octylphthalate	3	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Polycyclic Aromatic Hydrocarbons (PAHs) - (but see 8270C-SIM analysis next page)											
Acenaphthene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Acenaphthylene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Anthracene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Benzo(a)anthracene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Benzo(a)pyrene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Benzo(b)fluoranthene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Benzo(g,h,i)perylene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Benzo(k)fluoranthene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Chrysene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Dibenzo(a,h)anthracene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Fluoranthene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Fluorene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Indeno(1,2,3-cd)pyrene	0.018	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
2-Methylnaphthalene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Naphthalene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Phenanthrene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81
Pyrene	0.2	--	4.76	<4.95	<4.76	<4.76	<4.81	<4.85	<4.76	<4.76	<4.81

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Phthalates/PAHs via EPA Method 8270M-SIM											
Phthalate Esters											
bis(2-Ethylhexyl)phthalate	2.2	--	0.952	<0.0952	<0.952	<0.952	<0.952	<0.0952	**1.44**	**1.01**	<0.962
Butylbenzylphthalate	3	--	0.952	<0.0952	<0.952	<0.952	<0.952	<0.0952	<0.952	<0.952	<0.962
Diethylphthalate	3	--	0.952	<0.0952	<0.952	<0.952	<0.952	<0.0952	<0.952	<0.952	<0.962
Dimethylphthalate	3	--	0.952	<0.0952	<0.952	**0.956**	<0.952	<0.0952	<0.952	<0.956	<0.962
Di-n-butylphthalate	3	--	0.952	<0.0952	**2.52**	<0.952	<0.952	<0.0952	<0.952	<0.952	<0.962
Di-n-octylphthalate	3	--	0.952	<0.0952	<0.952	<0.952	<0.952	<0.0952	<0.952	<0.952	<0.962
PAHs											
Acenaphthene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Acenaphthylene	0.2	--	0.143/0.286	<0.0952	<0.143	<0.143	<0.952	<0.0952	<0.143	<0.286	<0.0962
Anthracene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Benzo(a)anthracene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Benzo(a)pyrene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Benzo(b)fluoranthene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Benzo(g,h,i)perylene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Benzo(k)fluoranthene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Chrysene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	**0.141**	<0.0962
Dibenzo(a,h)anthracene	0.018	--	0.190	<0.190	<0.190	<0.190	<0.190	<0.190	<0.190	<0.190	<0.192
Fluoranthene	0.2	--	0.0952	<0.0952	<0.0952	**0.096**	<0.0952	**0.109**	<0.0952	**0.635**	<0.0962
Fluorene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Indeno(1,2,3-cd)pyrene	0.018	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Naphthalene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0952	<0.0962
Phenanthrene	0.2	--	0.0952	<0.0952	<0.0952	**0.096**	<0.0952	<0.0952	<0.0952	**0.241**	<0.0962
Pyrene	0.2	--	0.0952	<0.0952	<0.0952	<0.0952	<0.0952	**0.118**	**0.0975**	**0.515**	<0.0962

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
Organochlorine Pesticides via EPA Method 8081A/8082											
α - BHC	0.0049	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
β - BHC	0.017	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
γ - BHC (Lindane)	0.052	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
δ - BHC	0.037	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Aldrin	0.00005	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Chlordane	0.00081	0.500	1.00	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
DDE	0.00022	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
DDD	0.00031	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
DDT	0.00022	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
DDT - total (DDE+DDD+DDT)	0.2	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Dieldrin	0.000054	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endosulfan alpha-	0.056	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endosulfan beta-	0.056	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endosulfan sulfate	89	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endrin	0.036	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endrin aldehyde	0.3	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Endrin ketone	--	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Heptachlor	0.000079	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Heptachlor epoxide	0.000039	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Methoxychlor	0.03	0.0500	0.100	<0.0962	NA	NA	<0.0962	<0.0962	NA	NA	<0.0980
Toxaphene	0.0002	2.50	2.50	<2.40	NA	NA	<2.40	<2.40	NA	NA	<2.45

Table 3
Stormwater Sampling Results
GS Roofing Products Site
Portland, Oregon

all values in µg/L unless otherwise indicated	SLV (DEQ 2008)	MDL	MRL	Outfall A				Outfall B			
				21-Oct-09	7-Nov-09	23-Feb-10	19-May-10	21-Oct-09	7-Nov-09	23-Feb-10	19-May-10
PCB Aroclors via EPA Method 8082											
Aroclor 1016	0.96	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1221	0.034	0.500	1.00	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1232	0.034	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1242	0.034	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1248	0.034	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1254	0.033	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Aroclor 1260	0.034	0.250	0.500	<0.481	NA	NA	<0.481	<0.481	NA	NA	<0.490
Chlorinated Herbicides via EPA Method 8151 (Mod)											
2,4-D	70	0.229	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
2,4-DB	290	0.317	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
2,4,5-TP (Silvex)	50	0.233	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
2,4,5-T	370	0.474	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
Dalapon	200	0.347	5.00	<5.00	NA	NA	NA	<5.00	NA	NA	NA
Dicamba	1,100	0.331	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
Dichlorprop	370	0.192	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
Dinoseb	7	0.277	1.00	<1.00	NA	NA	NA	<1.00	NA	NA	NA
MCPA	18	87.1	300	<300	NA	NA	NA	<300	NA	NA	NA
MCPP	37	33.2	300	<300	NA	NA	NA	<300	NA	NA	NA

Detected analytes in bold.

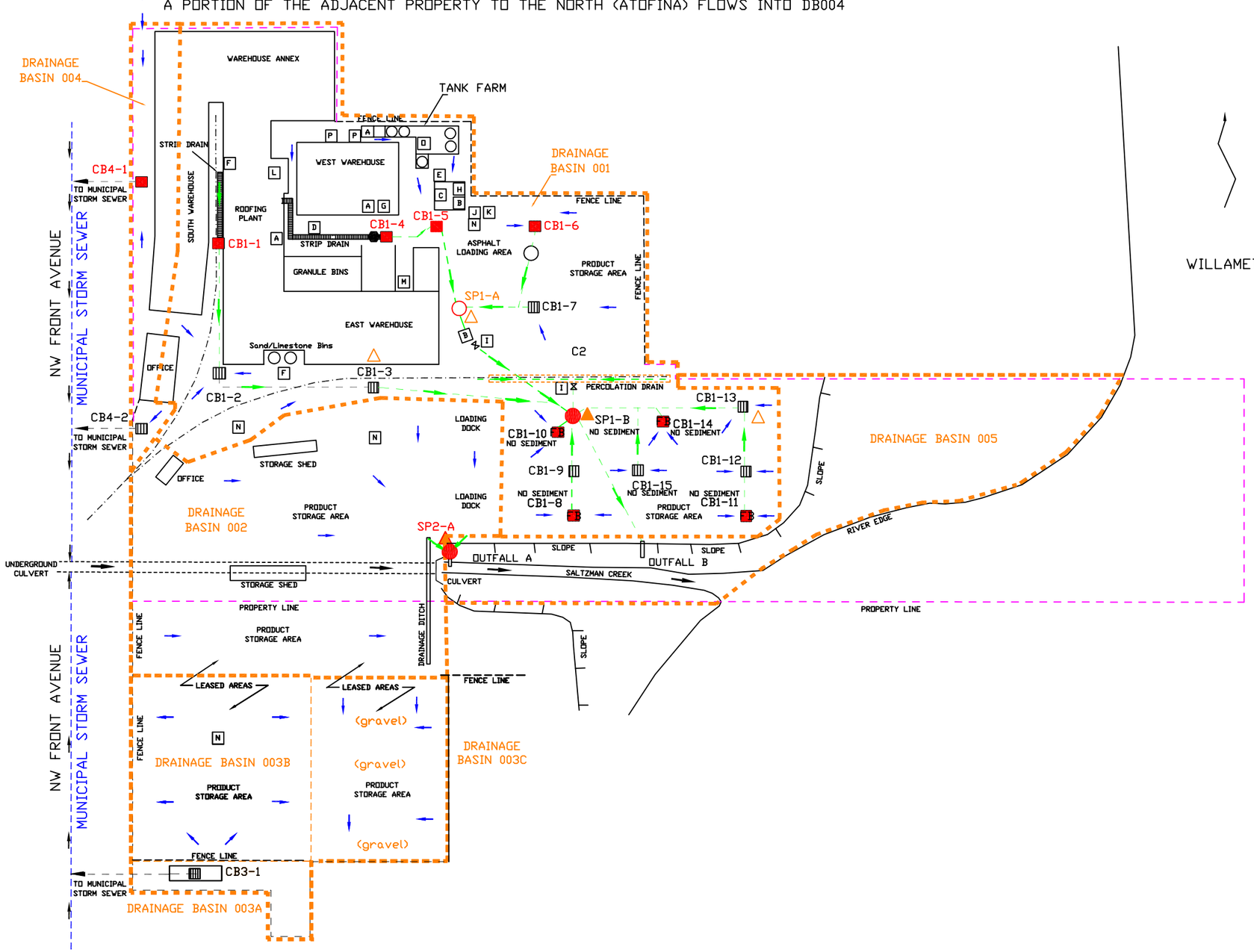
The 2010 sampling events are both considered "first-flush" events.

SLV = screening level value (see Table 3-1 Portland Harbor Joint Source Control Strategy (JSCS) dated December 2005; "--" = value not available; µg/L = micrograms per liter; mg/L = milligrams per liter; MDL = laboratory method detection limit; MRL = laboratory method reporting limit; NA = not analyzed for the indicated parameter.

Any analytes listed in the laboratory reports that are not tabulated above were not detected above their respective MRL.

FIGURES

NOTE: DURING RECENT FIELD RECONNAISSANCE, IT WAS OBSERVED THAT SURFACE WATER FROM A PORTION OF THE ADJACENT PROPERTY TO THE NORTH (ATOFINA) FLOWS INTO DB004



LEGEND

- PROPERTY LINE
- FENCE LINE (= PROPERTY LINE WHERE PRESENT)
- RAILROAD TRACKS
- CATCH BASIN
- CATCH BASIN SEDIMENT SAMPLING LOCATION
- FB 'FILTER BAG' SEDIMENT SAMPLE
- STORMWATER/NPDES SAMPLING POINT
- CONTINGENT STORMWATER SAMPLING POINT
- STORM SEWER OIL/WATER SEPARATOR
- SHUT-OFF VALVE
- WEIR
- STORM SEWER LINE
- STORMWATER FLOW DIRECTION
- SURFACE DRAINAGE DIRECTION
- MUNICIPAL SEWER FLOW DIRECTION
- DRAINAGE BASIN BOUNDARY
- DRAINAGE SUB-BASIN BOUNDARY

FORENSIC ENVIRONMENTAL SERVICES, INC.	FIGURE 1
STORMWATER SAMPLING LOCATIONS GS ROOFING PRODUCTS SITE PORTLAND, OREGON	
0 — 120 SCALE IN FEET	DRAWN BY: APPROVED BY:

f1swSAMP.DWG

Figure 2
May 18-19, 2010 Hydrograph
Sta. 129 (Astor Elementary School Rain Gauge)

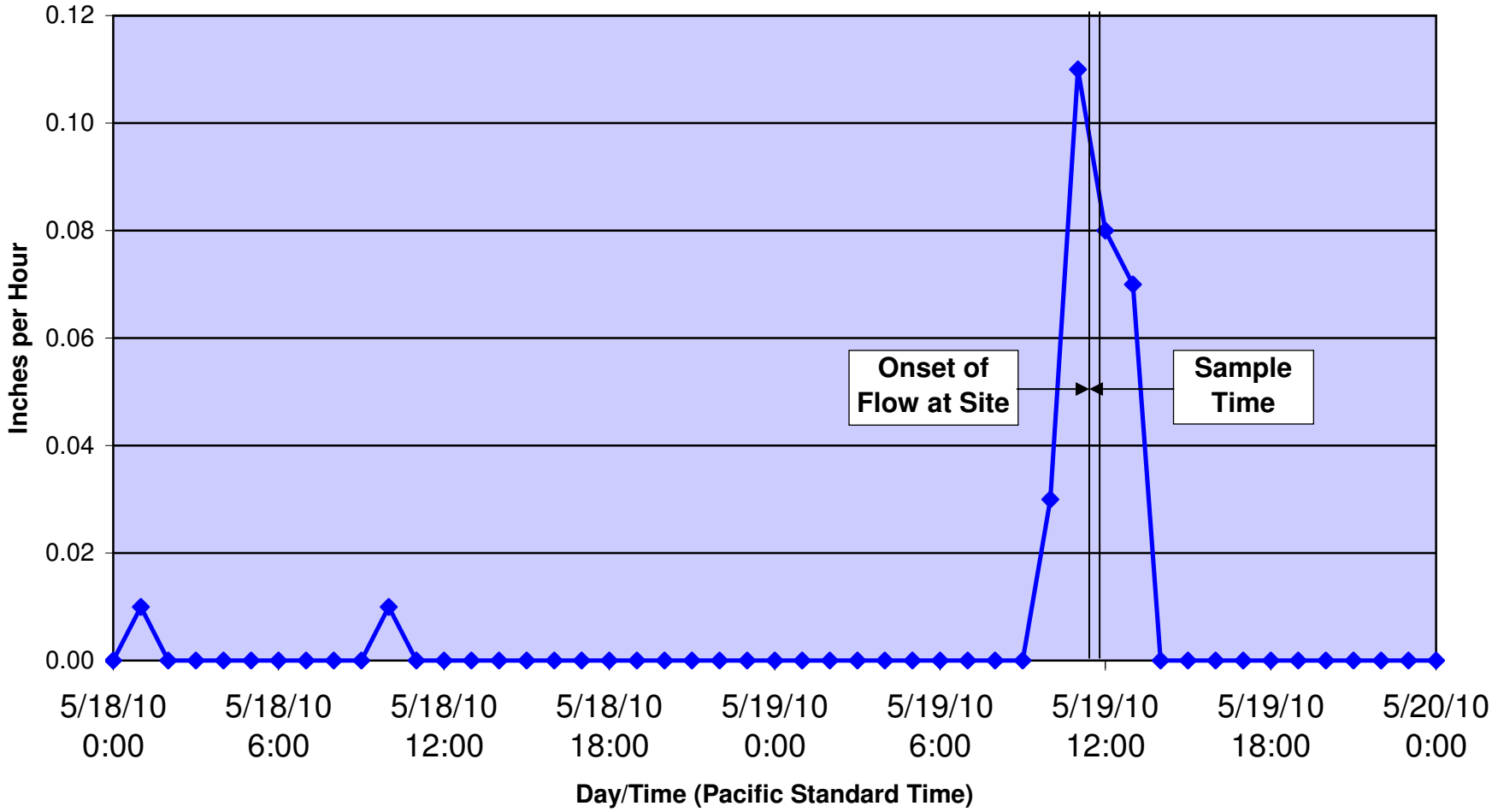
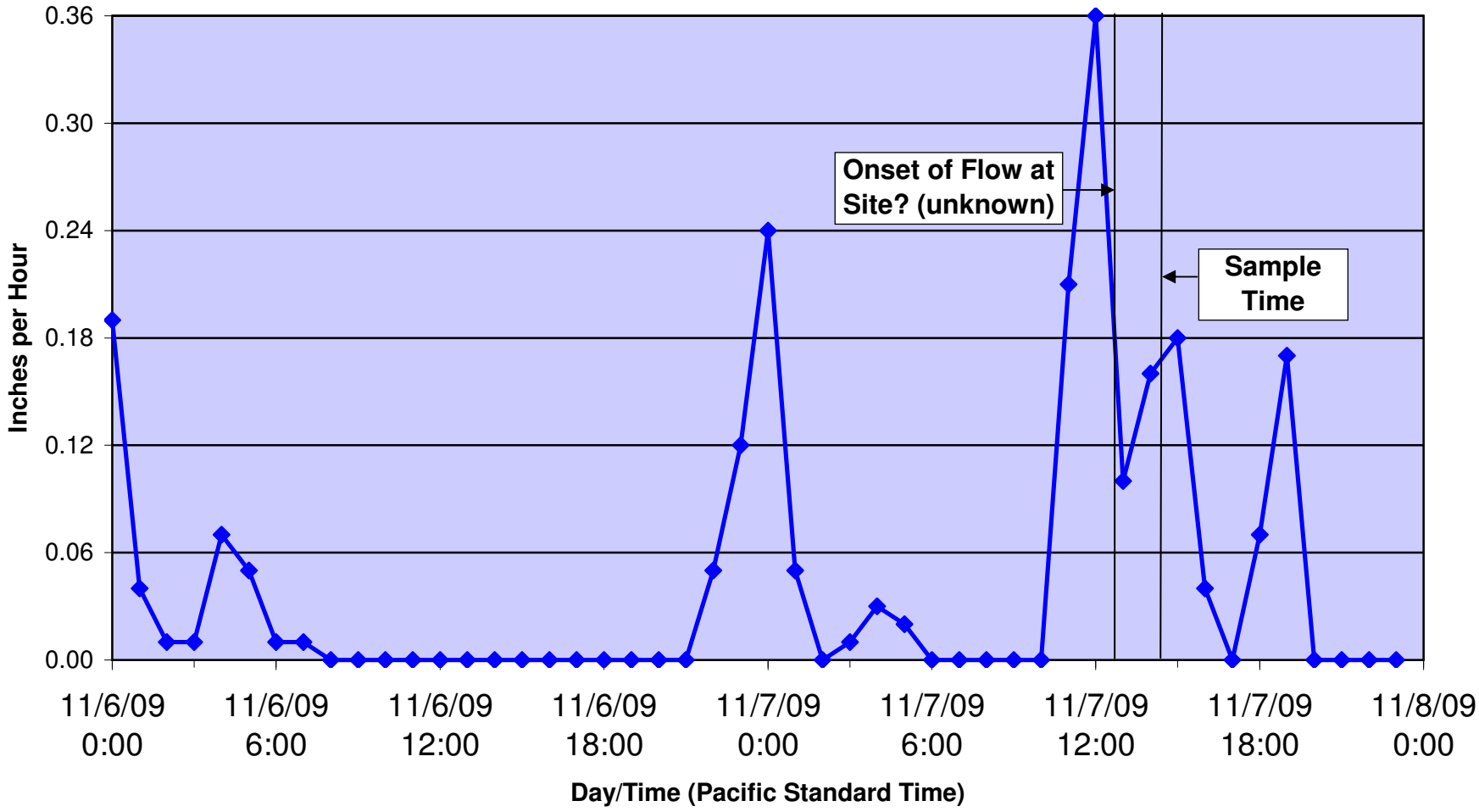


Figure 2A
November 6-7, 2009 Hydrograph
Sta. 129 (Astor Elementary School Rain Gauge)



APPENDIX A

LABORATORY
DATA REPORTS